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METHOD OF MANUFACTURING ELECTROMAGNETIC DEVICES USING KINETIC SPRAY

Abstract

A method of manufacturing electric machines comprised of geometrically patterned arrays of permanent magnets, soft magnetic materials, and electrical conductors deposited by kinetic spraying methods directly atop a carrier. The magnets and planar coils of the present invention may be integrally formed atop carriers to form electrical machines such as motors, generators, alternators, solenoids, and actuators. The manufacturing techniques used in this invention may produce highly defined articles that do not require additional shaping or attaching steps. Very high-purity permanent and soft magnetic materials, and conductors with low oxidation are produced.